



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/551,124

09/26/2005

Toru Inoue

1089.45436X00

4032

20457 7590 01/07/2009
ANTONELLI, TERRY, STOUT & KRAUS, LLP
1300 NORTH SEVENTEENTH STREET
SUITE 1800
ARLINGTON, VA 22209-3873

EXAMINER

CHANG, VICTOR S

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

01/07/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/551,124	Applicant(s) INOUE ET AL.	
	Examiner VICTOR S. CHANG	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2008 and 20 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5,6,13-18 and 20-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5,6,13-18 and 20-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Introduction

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/7/2008 has been entered. Applicants' amendments and remarks filed on 10/20/2008 have been entered. Claims 1 and 13 have been amended. Claims 2-4, 7-12, 19 and 23-26 have been cancelled. Claims are 1, 5, 6, 13-18 and 20-22 are pending.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. In response to the species election and amendments, the grounds of rejections have been updated as set forth below. Rejections not maintained are withdrawn.

Rejections based on Prior Art

4. Claims 1, 5, 6, 13-18 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lucca et al. [US 4966799].

Lucca's invention relates to a vehicle noise reducing element (sound insulator) [abstract]. Fig. 2 shows that the element contains a padding layer 21, a supporting layer 23, and a heat-sealable adhesive layer 27 between the two layers. The padding layer is sound absorbing (sound

Art Unit: 1794

absorption layer) and consists of a thermoformed fiber mat bonded with a thermoplastic [col. 2, ll. 67-68]. The thickness of the padding layer depends on the required sound absorption [col. 3, ll. 40-41]. Useful fiber mat for the sound-absorbing layer 21 has a low density of 50-150 kg/m³ (0.05-0.15 g/cm³) [col. 3, ll. 49-55]. The supporting layer consists of a solid thermo plastic sheet material (air impermeable layer) [col. 2, ll. 59 through col. 3, ll. 6]. The thickness of the element can be adapted to specific use requirements. An element which is to be used as a sound insulator and needs to have little mechanical stability but good sound absorption should possess a relatively thin supporting layer and a comparatively thick padding layer. In contrast, embodiments of the structural element (i.e., sound insulator with improved mechanical strength) which have been tested in practice, the thickness of the supporting layer is 1-10 mm and that of the padding layer 5-50 mm [col. 3, ll. 29-44]. A thin heat-sealable film is used as an adhesive layer between the padding layer and the supporting layer [col. 3, ll. 5-6].

For claims 1, 5, 13-15, 17, 18, 21 and 22, regarding the resonance property of Lucca's air impermeable layer, it is deemed to be inherent to the same general structure and composition for the same end use as the claimed invention. Lucca is silent about: 1) the useful thickness range and the area weight of the supporting layer when little mechanical stability but good sound absorption is required; 2) the adhesion peel strength between the sound-absorbing layer 21 and the solid supporting layer 23. However, regarding 1), since Lucca teaches that the thickness of the element can be adapted to specific use requirements, and for element which is to be used for a good sound absorption and needs to have little mechanical stability, the supporting layer should be thin and a comparatively thick padding layer as set forth above, a workable thin thickness of the supporting layer and an inherently related low area weight are deemed to be obvious routine

Art Unit: 1794

optimizations to one of ordinary skill in the art, motivated by the desire to obtain required sound absorption properties. It should be noted that the workable thin thickness of the supporting layer would be reasonably expected to be less than the thickness range of 1-10 mm for structural embodiments. Regarding 2), since Lucca teaches the same subject matter of the same structure and composition, and for the same use as the claimed invention, a workable adhesion peel strength is deemed to be obviously provided by practicing the invention of prior, dictated by the same utility as the claimed invention. Regarding the % adhesion area between the sound-absorbing layer 21 and the solid supporting layer 23, it is read upon by Lucca's thin heat-sealable adhesive film layer 27, and Figs. 1-3 show that all the layers are coextensive, i.e., 100% adhesion area. Finally, regarding the orientation of the sound insulator in use, since they do not serve to distinguish structure of the claimed invention over the prior art, they have not been given any patentable weight. *In re Pearson*, 494 F.2d 1399, 1403, 181 USPQ 641, 644 (CCPA 1974).

For claims 6, 16 and 20, since Lucca teaches that the noise reducing element has sufficient compressive strength [col. 1, ll. 63-66], a workable initial compression repulsive force is deemed to be obviously provided by practicing the invention of prior, dictated by the same end use requirements as the claimed invention.

Response to Arguments

5. Applicants argue at Remarks filed 10/20/2008 page 8

“The structural element of Lucca et al. is different in both structure and concept from the ultra-light sound insulator of the present invention.

The sound insulator of the present invention is an ultra-light sound insulator. It is intended to be ultra-light and formed so that the sound absorption layer is adapted to face a vehicle body panel, while the air-permeable resonance layer is adapted to face a vehicle interior.

Art Unit: 1794

The ultra-light sound insulator of the present invention does not need to be dimensionally stable and does not need to itself to form a structural element. In contrast, because of the dimensionally stable supporting layer In Lucca et al., it is intended to form a structural element that can be used without a holding frame or without a supporting surface.”

However, regarding the orientation of the sound insulator in use, since they do not serve to distinguish structure of the claimed invention over the prior art, they have not been given any patentable weight. Regarding the use of Lucca’s invention as a structural element, since Lucca teaches an embodiment which is used for a good sound absorption and needs to have little mechanical stability (non-structural element), and specifically teaches that in such an embodiment, the supporting layer should be thin and a comparatively thick padding layer, applicants’ argument directed to embodiments not relied upon is misplaced.

Applicants argue at page 9

“The Lucca et al. patent discloses that the supporting layer has an density of 1.5 to 2.5 Kg/l (= 1.5 to 2.5 Kg/dm³ = 1500 to 2500 kg/m³) (1 dm = 1/10 m, 1 dm³ = 1/1000 m³) and a thickness of 1 to 10 mm (see column 3, lines 41-44, column 4, lines 1-5, and claim 8 of Lucca et al.). The area-weight thereof is thus calculated to be 1.5 to 2.5 Kg/m² when the thickness is 1 mm, and 15 to 25 Kg/m² when the thickness is 10 mm. Accordingly the area-weight of the supporting layer is calculated to be 1.5 to 25 Kg/m².”

Lucca merely stated that the tested thickness range of the supporting layer in structural embodiments. Nowhere has Lucca set the minimum thickness of workable supporting layer when non-structural embodiment is intended. Since Lucca expressly teaches that an element which is to be used as a sound insulator and needs to have little mechanical stability but good sound absorption should possess a relatively thin supporting layer and a comparatively thick padding layer. For non-structural embodiment, a workable thin supporting layer with a thickness less than the range of the structural embodiments is reasonably expected, as well as its related area-weight.

Art Unit: 1794

Applicants argue at page 10 that

“in Lucca et al., the supporting layer (12, 23, 32) is "rigid or solid" and the adhesion strength of the adhesive layer is not disclosed. The supporting layer 12 in Fig. 1 is a solid sheet of a thermoformable plastic material (see column 2, lines 50 to 52). Supporting layer 23 in Fig. 2 is polypropylene containing a mineral filler (see column 2, line 68 to column 3, line 2). The supporting layer 32 in Fig. 3 is glass fiber- reinforced heat-setting material (see column 3, lines 13 to 15).”

However, since Lucca teaches that mineral fillers or glass fiber can be (optionally) added to polyolefin, polyamide, polyester, etc., to form the supporting layer for an increased mechanical strength [col. 4, ll. 1-12], they are clearly disclosed as optional components for structural embodiments, not required for the relied upon non-structural embodiment, applicants' argument is misplaced.

Applicants argue at page 10

“In Lucca et al., adhesive strength and adhesive area of adhesive layers 15, 27, 35 against the supporting layers 12, 23, 32 are unclear. In general, an adhesive layer is not used or an adhesive layer having a small adhesive strength is used in an ultra-light sound insulator having a similar weight as the present invention. The lighter the sound insulator is, the simpler the adhesion method with less amount of adhesive material chosen in order to simplify the production process and to reduce the production cost.”

However, since Lucca teaches the same subject matter of the same structure and composition, and for the same use as the claimed invention, a workable adhesion peel strength is deemed to be obviously provided by practicing the invention of prior, dictated by the same utility as the claimed invention. Applicants' argument directed to structures not taught by Lucca is clearly misplaced.

Applicants argue at page 15

“The word "resonance" does not appear at all in the specification of Lucca et al. No resonance conditions, especially, no adhesive conditions are disclosed by Lucca et al. While the Examiner alleges that the adhesive layer of Lucca et al. has an adhesive area of 100 % based on the figures, the figures of Lucca et al. merely show the adhesive layer in

Art Unit: 1794

a schematic manner. Adhesive conditions are not identified in the text at all. Accordingly, citing the figures as a basis for this rejection is unreasonable.”

However, regarding the resonance property of Lucca’s air impermeable layer, it is deemed to be inherent to the same general structure and composition for the same end use as the claimed invention. Further, since Lucca teaches a thin heat-sealable adhesive film layer 27, and Figs. 1-3 show that all the layers are coextensive, it is unseen how the adhesion area could be less than 100%.

Applicants argue at page 17

“tuning of both the sound absorption rate and the transmission loss possible at any desired frequency band from low frequency domain to high frequency domain (see page 25, line 12 to page 26, line 24 of Applicants' substitute specification). Such is neither disclosed by or obvious over Lucca et al.

However, while Lucca is silent about the proposed theory for sound absorption, since Lucca expressly teaches the use of thin support layer, a comparatively thick padding layer, and a thin adhesive layer for obtaining good sound absorption property, clearly the thicknesses of these layers are shown to be result effective in sound absorption. The examiner maintains that workable layer thicknesses are deemed to be obvious routine optimization, motivated by the desire to obtain a good sound absorption property for the same end use as the claimed invention.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VICTOR S. CHANG whose telephone number is (571)272-1474. The examiner can normally be reached on 7:00 am - 5:00 pm, Tuesday - Friday.

Art Unit: 1794

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Victor S Chang/
Primary Examiner, Art Unit 1794